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Application of

Inventor(s): Gregory B. Arnold et al

Serial No.: 09/384,675

Filed: August 27, 1999

Title: PORTABLE PRINTER AND DATA ENTRY DEVICE

Examiner: Mr. J. Fureman - Group Art Unit 2876

Hon. Commissioner of Patents and Trademarks

Washington, DC 20231

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AMENDED APPELLANT'S APPEAL BRIEF

This is an appeal from the final rejection dated April 25, 2001.

REAL PARTY IN INTEREST

The real party in interest is Monarch marking Systems, Inc.

RELATED APPEALS AND INTERFERENCES

There is no related appeal or interference.

STATUS OF CLAIMS

The claims on appeal are 8 through 22. Claims 1 through 7 have been cancelled. Claims 23 through 36 are canceled in an amendment filed herewith. No claim has been allowed.



## STATUS OF AMENDMENTS

All the amendments have been entered except for the amendment submitted herewith correcting a typographical error in claim 20 and canceling claims 23 through 36. In that entry of these amendments is fully anticipated, the APPENDIX includes the amendment submitted herewith.

## SUMMARY OF THE INVENTION

Although reference characters and a specific embodiment of the invention are referred to herein for the convenience of the honorable Board, there is no intention thereby to limit the invention.

With reference initially to Figs. 1 and 2, there is shown a portable data entry device 12 and a portable printer 11 [Page 3, lines 12 and 13]. The printer has an elongate housing 17 [Page 3, line 20] comprised of a pair of opposed mirror-image housing sections 18 and 19 [Page 3, line 21]. The housing 17 has a front portion (left side of Figs. 1 and 3) with a compartment 20 [Page 3, line 22] adapted to receive the data entry device 12. The compartment 20 has an open end (left end of housing 17 in Figs. 1 and 3) through which the device 12 can be slid to a position below retaining flanges 22 and 23 [Page 3, line 27] until a connector 30 [Page 4, line 8] in the device 12 connects to a connector 31 [Page 4, line 31] on the printer 11. The housing 17 has an open top at its front end portion through which a display 15 can be viewed and keys 14 [Page 3, line 18] can be operated.

The front end of the data entry device 12 includes a scanner 13 [Page 3, line 18] for scanning data, such as a bar code on a label L [Page 3, line 16].

As best shown in Figs. 3 and 4, an elongated printed circuit board 59 [Page 5, line 23] has a front end which mounts preferably a plurality of batteries 62 [Page 5, last line]. There is a separator 65 [Page 6, line 8] between each pair of batteries. The rear portion of the printed circuit board 59 mounts a print module 34 [Page 4, line 20] which has a thermal print head 38 and a cooperable platen roll 39 [Page 4, line 25] for printing on a web of paper such as a label web W [Page 4, line 22]. The printed circuit board 59 mounts the batteries 62 and the print module 34 to minimize the need for wires such as ribbon connectors and to obviate the need to mount the batteries and the print module on other parts of the printer.

The print module 34 and the roll R [Page 4, line 21] of the web are, indeed, disposed at the rear portion of the printer housing 17. The printer housing 17 has space for receiving the roll R.

#### ISSUES

1. Whether or not claims 8, 9, 10 and 19 are rejectable under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al (U.S. patent 5,047,615).

2. Whether or not claims 11 through 18 are rejectable under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al in view of Sherman et al (U.S. patent 5,110,226).

3. Whether or not claims 20 and 21 are rejectable under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al in view of Sherman et al and Goodwin et al (U.S. patent 5,486,259).

4. Whether or not claim 22 is rejectable under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al in view of Goodwin et al.

#### GROUPING OF CLAIMS

All the claims are submitted to be patentable and each claim is argued separately. The claims do not stand or fall together.

#### DESCRIPTION OF THE REFERENCES

Fukumoto et al U.S. patent 5,047,615 discloses a control unit or data entry device 1 having a bar code reader or scanner 2 coupled to the unit 1 by a cable. The unit 1 is received by a bar code printer 3. The printer 3 and the unit 1 can be optically coupled at terminals 9 and 10. The printer 3 has a housing with an upstanding wall which defines a space within which the unit 1 is received (Fig. 2). The printer 3 supports a roll of a web to be printed upon. The top portion of the unit 1 is received under member 8. The printer 3 does not have an open front end so that the unit 1 cannot be slid into the printer through any open end but must rather be dropped into the space within the upstanding wall.

Sherman et al U.S. patent 5,110,226 discloses a printer with a battery pack in a compartment closed off by a screwed-on door 110. Although not referenced by the Examiner, the main printer [printed] circuit board assembly 35 includes a printed circuit board 36, a circuit component or controller, a connector board 38 and a stand-off board (Col. 4, lines 27-31). The resulting main printed circuit board assembly is pushed into a printer cavity 45 (Fig. 2) of the lower printer housing shell 33 (Col. 4, lines 49-51). The printed circuit board 36 is mounted to the shell by screws 52 received in bosses 50. The printer mechanism 26, on the other hand, is mounted to the printer housing shell 33 by unnumbered screws received in bosses 57. The relationship of the printer mechanism 26 to the printed circuit board 36 is best shown in Fig. 3. The printer also has a printer cover 101 adjacent the paper 99.

Goodwin et al U.S. patent 5,486,259 discloses a hand-held labeler for printing and applying labels. As indicated in Col. 3, lines 11-13, the housing 11 is shown to have a pair of essentially mirror-image housing sections 35 and 36 connected to the handle.

#### ARGUMENT

Claims 8 through 10 and 19 are rejected over Fukumoto. Claim 8 defines a portable printer with an elongate housing having a front portion with a compartment adapted to receive a data entry device, the housing further having a rear portion, the housing providing space at

the rear portion for receiving a roll of a label web and an elongate printed circuit board disposed in the housing. The claim further defines at least one battery on the printed circuit board at the front portion of the housing, a print module mounted to the circuit board at the rear portion of the housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.

The Examiner admits in the final Office Action on page 4, with respect to claim 8 that:

“Fukumoto et al fails to specifically teach the battery being disposed at the front portion, an elongate circuit board disposed in the housing, the battery being on the printed circuit board at the front portion of the housing, and a print module mounted to the circuit board at the rear portion of the housing.

The Examiner has not met his burden of establishing a prima facie case of obviousness. The deficiencies in the prior art are not satisfied by his unsupported opinion that “it was well known to those of ordinary skill in the art at the time of the invention to dispense a battery at a front portion of a housing, and include a circuit board shaped to fit in a housing for connecting components of a device” and “it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Fukumoto et al, the battery disposed at the front portion, an elongate circuit board

disposed in the housing, the battery being on the printed circuit board at the front portion of the housing, a print module mounted to the circuit board at the rear portion of the housing, in order to provide easy access to the battery, and to provide a secure electrical connection between the components of the system". The Examiner's unsupported conclusions only help to establish the unobviousness of the claimed invention.

Claim 9 is dependent on claim 8 and further defines that the compartment has an open top and an open front end, the compartment being transversely channel-shaped, and an electrical connector at the rear end of the compartment for connection to a data entry device. In the claimed arrangement, the compartment has an open front end to enable the data entry device to be slid into place to enable the electrical connector to be connected to the data entry device. The Fukumoto patent clearly fails to disclose either an open end or an electrical connector at the rear end of a compartment. Again, the Examiner dismisses these additional structural features on obviousness to one skilled in the art.

Claim 10 is dependent on claim 9 and defines that there are a plurality of adjacent batteries, a separator between each pair of adjacent batteries, and the separators being secured to the printed circuit board. Again, the Examiner's reference to those additional

features as being obvious to one skilled in the art are unsupported conclusions.

Claim 19 defines, in combination, a portable printer and a portable data entry device including an elongate data entry device housing having a front end, a scanner disposed at the front end of the data entry device housing for scanning a label, a display and a plurality of manually operable keys, the printer including an elongate printer housing having a front portion with a compartment adapted to receive the data entry device, the housing further having a rear portion, the printer housing providing space at the rear portion for receiving a roll of a label web, an elongate printed circuit board disposed in the housing, at least one battery on the printed circuit board at the front portion of the printer housing, a print module mounted to the circuit board at the rear portion of the printer housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on a label web.

Again, there is no disclosure in Fukumoto of a printed circuit board at the front portion of the printer housing, or of a print module mounted to the circuit board at the rear portion of the printer housing, or of a scanner disposed at the front end of the data entry device. Again the Examiner has not met his burden of establishing a prima facie case of obviousness. The structural recitations pointed out above are clearly not disclosed in Fukumoto.



Claims 11 through 18 are rejected over Fukumoto et al in view of Sherman. Claim 11 defines a portable printer with an elongate housing having a front portion with an open-ended channel-shaped compartment adapted to slidably receive a data entry device through the open end of the compartment, the compartment having a substantially open top portion, the housing further having a rear portion, the housing providing internal space at the rear portion for receiving a roll of a label web, an elongate printed circuit board disposed in the housing, the printed circuit board having a front portion and a rear portion, a print module mounted to the rear portion of the printed circuit board at the rear portion of the housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.

Claim 11 is submitted to define over Fukumoto for generally the same reasons as claim 8 but claim 11 does not recite either a battery or its location. And yet, the Examiner has not cured the deficiencies of Fukumoto by Sherman. Sherman is relied on for the teaching of a portable printer with an elongate housing, the housing having a rear portion, the housing providing an internal space at the rear portion for receiving a roll of a label web, an access opening in the housing to the inside of the housing, a battery being accessible through the access opening, including a door movable between open and closed position. Sherman is irrelevant to claim 11 because claim 11 does not claim

either a battery or a door. Moreover, the Examiner is incorrect when he states that the data entry device can be slidably received in the compartment of Fukumoto, because the front end of the Fukumoto compartment has a wall which would prevent such slidable receipt. At most, Fukumoto has a drop-in compartment.

Claim 12 is dependent on claim 11 and further defines at least one battery in the housing, and an access opening in the housing between the compartment and the inside of the housing, the battery being accessible through the access opening. Fukumoto does not disclose an access opening as defined in claim 12 in combination with other features contained in parent claim 11. Even when Sherman and Fukumoto are combined the claimed invention is not met.

Claim 13 is dependent on claim 12 and discloses a door for the opening movable between closed and open positions. Fukumoto also fails to disclose the further feature of claim 13 and Sherman is relied upon. Claim 13 is submitted to be allowable over the Fukumoto and Sherman patents which fail to teach the combination of structure defined by claim 13.

Claim 14 defines a portable printer with an elongate housing having a front portion and a rear portion, the front portion having a compartment adapted to receive a data entry device, a thermal print module having a print head and a cooperating platen roll disposed at the rear portion, an elongate printed circuit board in the housing

extending from the front portion to the rear portion of the housing, the print module being mounted on the printed circuit board at the rear portion of the housing, and the housing having space within the rear portion for receiving a roll of a label web.

Again, the Sherman patent is not relevant because it does not even claim a battery or an access opening. Fukumoto does not disclose an elongate printed circuit board in the housing extending from the front portion to the rear portion of the housing, or a print module being mounted to the printed circuit board at the rear portion of the housing.

Claim 15 defines, in combination, a portable printer and a portable data entry device connected thereto, the portable data entry device including an elongate data entry device housing having a front end, a scanner disposed at the front end of the data entry device housing for scanning a label, a display and a plurality of manually operable keys, the printer including an elongate printer housing having a front portion with an open-ended channel-shaped compartment adapted to slidably receive the data entry device through the open end of the compartment, the scanner being capable of receiving data through the open end of the compartment, the compartment having a substantially open top portion to enable access to the display and the keys, the printer housing further having a rear portion, the printer housing providing internal space at the rear portion for receiving a roll

of a label web, an elongate printed circuit board disposed in the printer housing, the printed circuit board having a front portion and a rear portion, a print module mounted to the rear portion of the printed circuit board at the rear portion of the printer housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web. As stated above, the compartment of Fukumoto does not have an open end. The Fukumoto data entry device is a drop-in unit, and is not slidably received in the compartment. There is no disclosure in Fukumoto of a print module mounted to the rear portion of a printed circuit board at the rear portion of the printer housing. Again, the Sherman patent is not relevant to claim 15.

Claim 16 is dependent on claim 15 and defines at least one battery in the printer housing, and an access opening in the printer housing between the compartment and the inside of the printer housing, the battery being accessible through the access opening. Even combining the Fukumoto and Sherman patents, the claimed combination is not met. Claim 15 defines an improved combination not suggested by the references.

Claim 17 is dependent on claim 16 and further defines in the improved combination, a door for the opening movable between closed and open positions.

Claim 18 defines, in combination, a portable printer and a portable data entry device connected thereto, the portable data entry device including an elongate data entry device housing having a front end, a scanner disposed at the front end of the data entry device housing for scanning a label, a display and a plurality of manually operable keys, the printer including an elongate printer housing having a front portion and a rear portion, the front portion having a compartment adapted to receive the data entry device, a thermal print module having a print head and a cooperating platen roll disposed at the rear portion, an elongate printed circuit board in the printer housing extending from the front portion to the rear portion of the printer housing, the print module being mounted on the printed circuit board at the rear portion of the printer housing, and the printer housing having space within the rear portion for receiving a roll of a label web. Claim 18 is allowable over Fukumoto and Sherman. Sherman is irrelevant to claim 18. Fukumoto does not disclose a scanner at the front end of the data entry device housing, nor an elongate printed circuit board on the printer housing extending from the front portion to the rear portion of the printer housing, nor a print module mounted on the printed circuit board at the rear portion of the printer housing. Clearly Fukumoto does not teach the claimed invention.

Claims 20 and 21 are rejected as unpatentable over Fukumoto in view of Sherman and Goodwin.

Claim 20 defines a portable printer with an elongate housing having a front portion with an open-ended channel-shaped compartment adapted to slidably receive a data entry device through the open end of the compartment, the compartment having a substantially open top portion, the housing having a pair of opposed connected substantially mirror-image housing sections, the housing further having a rear portion, the housing providing internal space at the rear portion for receiving a roll of a label web, an elongate printed circuit board disposed in the housing and supported by the housing sections, the printed circuit board having a front portion and a rear portion, a print module mounted to the rear portion of the printed circuit board at the rear portion of the housing, and a print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.

Fukumoto fail to teach an open-ended compartment to slidably receive a data entry device through the open end, or a pair of opposed connected substantially mirror-image housing sections, or an elongate printed circuit board disposed in the housing and supported by such housing sections, or a print module mounted to the rear portion of the printed circuit board at the rear portion of the housing. It is true that Goodwin, owned by the assignee of the present invention, discloses a pair of opposed substantially mirror-image housing section. Again,

Sherman is irrelevant. Claim 20 is submitted to define an unobvious combination over Fukumoto and Goodwin.

Claim 21 defines a portable printer with an elongate housing having a front portion and a rear portion, the front portion having a compartment adapted to receive a data entry device, the housing having a pair of opposed substantially mirror-image housing sections, a thermal print head module having a print head and a cooperating platen roll disposed at the rear portion, an elongate printed circuit board supported by the housing sections in the housing and extending from the front portion to the rear portion of the housing, the print head module being mounted on the printed circuit board at the rear portion of the housing, and the housing having space within the rear portion for receiving a roll of a label web. As mentioned above, Sherman is irrelevant to claim 21. Fukumoto fails to teach a thermal print head module having a print head and a cooperating platen roll disposed at the rear portion of the elongate housing, together with an elongate printed circuit board supported by a pair of opposed substantially mirror-image housing sections in the housing and extending from the front portion to the rear portion of the housing, and wherein the print head module is mounted on the printed circuit board at the rear portion of the housing. Notwithstanding the disclosure of Goodwin, Fukumoto clearly fails to teach the claimed combination.

Claim 22 is rejected over Fukumoto in view of Goodwin. Claim 22 defines a portable printer, comprising: an elongate housing having a front portion with a compartment adapted to receive a data entry device, the housing further having a rear portion, the housing providing space at the rear portion for receiving a roll of a label web, the housing having a pair of opposed substantially mirror-image connected housing sections, an elongate printed circuit board disposed in the housing and supported by the housing sections, at least one battery on the printed circuit board at the front portion of the housing, a print module mounted at the circuit board at the rear portion of the housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.

Claim 22 is submitted to be allowable over the applied references for reasons stated with respect to claim 21. No patent of record discloses "at least one battery on the printed circuit board at the front portion of the housing".

#### RESPONSE TO EXAMINER'S CONTENTIONS

The Examiner's contentions have been answered above, except as follows:

The Examiner's contention about judicial notice is not well taken. The Examiner contends that his statements are "on personal knowledge". If he has such personal knowledge that something is



common knowledge he certainly provided no support. Moreover, the cases cited by the Examiner do not support the proposition that structural distinction in the claims can be disposed of by referring to unsupported conclusions. In addition, the facts and circumstances involved in the old cases cited by the Examiner are quite different from the facts and circumstances in the present rejection. The Examiner is just supplying hindsight as to what the reference fails to teach.

The Examiner is correct that in Fukumoto the data entry device must be inclined and then the front end of the data entry device inserted (while inclined) under the lip 8 and only thereafter can the data entry device be dropped into the compartment. As such, the data entry device is not slid through an open end of the printer housing.

#### CONCLUSION

The rejections are based on prior art which fails to teach the invention as claimed. The Examiner proposes unsupported opinions, that everything not found the art in his search is well known in the art.

Presumably he searched for and did not locate (because it does not exist) prior art which would satisfy the deficiencies of the prior art. As such, the claims on appeal should be allowed to appellants.

Respectfully submitted,

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## APPENDIX

8. A portable printer, comprising: an elongate housing having a front portion with a compartment adapted to receive a data entry device, the housing further having a rear portion, the housing providing space at the rear portion for receiving a roll of a label web, an elongate printed circuit board disposed in the housing, at least one battery on the printed circuit board at the front portion of the housing, a print module mounted to the circuit board at the rear portion of the housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.

9. A portable printer as defined in claim 8, wherein the compartment has an open top and an open front end, the compartment being transversely channel-shaped, an electrical connector at the rear end of the compartment for connection to a data entry device.

10. A portable printer as defined in claim 9, wherein there are a plurality of adjacent batteries, a separator between each pair of adjacent batteries, and the separators being secured to the printed circuit board.

11. A portable printer, comprising: an elongate housing having a front portion with an open-ended channel-shaped compartment adapted to slidably receive a data entry device through the open end of

the compartment, the compartment having a substantially open top portion, the housing further having a rear portion, the housing providing internal space at the rear portion for receiving a roll of a label web, an elongate printed circuit board disposed in the housing, the printed circuit board having a front portion and a rear portion, a print module mounted to the rear portion of the printed circuit board at the rear portion of the housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.

12. A portable printer as defined in claim 11, at least one battery in the housing, and an access opening in the housing between the compartment and the inside of the housing, the battery being accessible through the access opening.

13. A printer as defined in claim 12, including a door for the opening movable between closed and open positions.

14. A portable printer, comprising: an elongate housing having a front portion and a rear portion, the front portion having a compartment adapted to receive a data entry device, a thermal print module having a print head and a cooperating platen roll disposed at the rear portion, an elongate printed circuit board in the housing extending from the front portion to the rear portion of the housing, the print module being mounted on the printed circuit board at the rear

portion of the housing, and the housing having space within the rear portion for receiving a roll of a label web.

15. In combination: a portable printer and a portable data entry device connected thereto, the portable data entry device including an elongate data entry device housing having a front end, a scanner disposed at the front end of the data entry device housing for scanning a label, a display and a plurality of manually operable keys, the printer including an elongate printer housing having a front portion with an open-ended channel-shaped compartment adapted to slidably receive the data entry device through the open end of the compartment, the scanner being capable of receiving data through the open end of the compartment, the compartment having a substantially open top portion to enable access to the display and the keys, the printer housing further having a rear portion, the printer housing providing internal space at the rear portion for receiving a roll of a label web, an elongate printed circuit board disposed in the printer housing, the printed circuit board having a front portion and a rear portion, a print module mounted to the rear portion of the printed circuit board at the rear portion of the printer housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.

16. The combination as defined in claim 15, at least one battery in the printer housing, and an access opening in the printer housing

between the compartment and the inside of the printer housing, the battery being accessible through the access opening.

17. The combination as defined in claim 16, including a door for the opening movable between closed and open positions.

18. In combination: a portable printer and a portable data entry device connected thereto, the portable data entry device including an elongate data entry device housing having a front end, a scanner disposed at the front end of the data entry device housing for scanning a label, a display and a plurality of manually operable keys, the printer including an elongate printer housing having a front portion and a rear portion, the front portion having a compartment adapted to receive the data entry device, a thermal print module having a print head and a cooperating platen roll disposed at the rear portion, an elongate printed circuit board in the printer housing extending from the front portion to the rear portion of the printer housing, the print module being mounted on the printed circuit board at the rear portion of the printer housing, and the printer housing having space within the rear portion for receiving a roll of a label web.

19. In combination: a portable printer and a portable data entry device connected thereto, the portable data entry device including an elongate data entry device housing having a front end, a scanner disposed at the front end of the data entry device housing for scanning a label, a display and a plurality of manually operable keys, the printer

including an elongate printer housing having a front portion with a compartment adapted to receive the data entry device, the housing further having a rear portion, the printer housing providing space at the rear portion for receiving a roll of a label web, an elongate printed circuit board disposed in the housing, at least one battery on the printed circuit board at the front portion of the printer housing, a print module mounted to the circuit board at the rear portion of the printer housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on a label web.

20. A portable printer, comprising: an elongate housing having a front portion with an open-ended channel-shaped compartment adapted to slidably receive a data entry device through the open end of the compartment, the compartment having a substantially open top portion, the housing having a pair of opposed connected substantially mirror-image housing sections, the housing further having a rear portion, the housing providing internal space at the rear portion for receiving a roll of a label web, an elongate printed circuit board disposed in the housing and supported by the housing sections, the printed circuit board having a front portion and a rear portion, a print module mounted to the rear portion of the printed circuit board at the rear portion of the housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.

21. A portable printer, comprising: an elongate housing having a front portion and a rear portion, the front portion having a compartment adapted to receive a data entry device, the housing having a pair of opposed substantially mirror-image housing sections, a thermal print head module having a print head and a cooperating platen roll disposed at the rear portion, an elongate printed circuit board supported by the housing sections in the housing and extending from the front portion to the rear portion of the housing, the print head module being mounted on the printed circuit board at the rear portion of the housing, and the housing having space within the rear portion for receiving a roll of a label web.

22. A portable printer, comprising: an elongate housing having a front portion with a compartment adapted to receive a data entry device, the housing further having a rear portion, the housing providing space at the rear portion for receiving a roll of a label web, the housing having a pair of opposed substantially mirror-image connected housing sections, an elongate printed circuit board disposed in the housing and supported by the housing sections, at least one battery on the printed circuit board at the front portion of the housing, a print module mounted to the circuit board at the rear portion of the housing, and the print module including a thermal print head and a platen roll cooperable with the print head for printing on the label web.